SEQUENCE LISTING

<110> EVANS, RONALD M. <120> Novel steroid-activated nuclear receptors and uses therefor <130> SALK2270-2 <140> 09/458,366 <141> 1999-12-09 <150> 09/227,718 <151> 1999-01-08 <160> 09/005,286 <161> 1998-01-09 <170> 48 <190> PatentIn Ver. 2.1 <210> 1 <211> 2068 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (583)..(1884) <220> <221> modified_base <222> (1263) <223> a, c, t, or g <400> 1 ggcacgagga gatctaggtt caaattaatg ttgcccctag tggtaaagga cagagaccct 60 cagactgatg aaatgegete agaattactt agacaaageg gatatttgee actetettee 120 cetttteetg tgtttttgta gtgaagagac etgaaagaaa aaagtaggga gaacataatg 180 agaacaaata Cggtaatoto ttoatttgot agttoaagtg otggaottgg gaottaggag 240 gggcaatgga gccgcttagt gcctacatct gacttggact gaaatatagg tgagagacaa 300 gattgtctca tatccgggga aatcataacc tatgactagg acgggaagag gaagcactgc 360 ctttacttca gtgggaatct cggcctcagc ctgcaagcca agtgttcaca gtgagaaaag 420 caagagaata agetaataet cetgteetga acaaggeage ggeteettgg taaagetaet 480 cettgatega teetttgeac eggattgtte aaagtggace eeaggggaga agteggagea 540 aagaacttac caccaagcag tecaagagge ecagaagcaa ac etg gag gtg aga Met Glu Val Arg

ccc aaa gaa age tgg aac cat get gae ttt gta cae tgt gag gae aca 642 Pro Lys Glu Ser Trp Asn His Ala Asp Phe Val His Cys Glu Asp Thr

1218

1266

1314

5					10				2	15					20	
																444
						Pro										690
						gta Val										738
		_	_		_	gaa Glu		_	_						_	786
_		_		_		ctg Leu 75		_				_		•		834
				_		Arg Cgg	_	-	•	_	_	_		_	_	882
						atg Met										930
						gcc Ala										978
						gga Gly										1026
_	_				_	atg Met 155	_		_	_				_		1074
acc	ttc	tcc	cat	ttc	aag	aat	ttc	cgg	ctg	cca	999	gtg	ctt	agc	agt	1122

Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser Phe Ala Lys Val

Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly Val Leu Ser Ser

ggc tgc gag ttg cca gag tct ctg cag gcc cca tcg agg gaa gaa gct

Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser Arg Glu Glu Ala

gcc aag tgg agc cag gtc cgg aaa gat ctg tgc tct ttg aag gtc tct

Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser Leu Lys Val Ser

ctg cag ctg cgg ggg gag gat ggc agt gtc tgg aac tac aaa ccc cca

Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn Tyr Lys Pro Pro

gee gac agt gge ggg aaa gag ate tte tee etg etg eec cac atg get

Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu Pro His Met Ala

gac atg tea acc tac atg ttc aaa ggc atc atc agc ttt gcc aaa gtc

190

170

185

									3							
245					250					255					260	
	tcc Ser															1410
	g1y aaa															1458
	gcg Ala														ttg Leu	1506
	gac Asp 310															1554
	ttc Phe															1602
	ctg Leu															1650
	cag Gln															1698
	aag Lys															1746
	ttc Phe 390									Glu						1794
	cag Gln	His	Thr	Gln		Leu	Leu	Arg	Ile	Gln	Āsp	Ile				1842
	acg Thr													tga		1887
gtggetgtee ttgggtgaca ceteegagag gtagttagae ecagageeet etgagtegee										jtegee	1947					
actcccgggc caagacagat ggacactgcc aagagccgac aatgccctgc tggcctgtct											2007					
ccct	aggg	gaa t	tcct	gcta	at ga	cago	tgg	tag	gcatt	cct	cago	gaagg	gac a	tggg	gtgcc	2067
c											2068					

<210> 2
<211> 434
<212> PRT
<213> Homo sapiens
<220>
<221> MOD_RES
<222> (227)
<223> Threonine

Cys Glu Asp Thr Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp 20 25 30

Glu Glu Val Gly Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala
35 40 45

Thr Gly Tyr His Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe 50 60

Phe Arg Arg Ala Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg 65 70 75 80

Lys Gly Ala Cys Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala 85 90 95

Cys Arg Leu Arg Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile 100 105 110

Met Ser Asp Glu Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys 115 120 125

Lys Ser Glu Arg Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr 130 140

Glu Glu Gln Arg Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys 145 150 155 160

Thr Phe Asp Thr Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly 165 170 175

Val Leu Ser Ser Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser 180 185 190

Arg Glu Glu Ala Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser 195 200 205

Leu Lys Val Ser Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn 210 215 220

Tyr Lys Pro Pro Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu 225 230 235

Pro His Met Ala Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser 245 250 255

Phe Ala Lys Val Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln

260

265

270

The Ser Leu Leu Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe 275 280 285

Asn Thr Val Phe Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu 290 295 300

Ser Tyr Cys Leu Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu 305 310 315

Glu Pro Met Leu Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His 325 330 335

Glu Glu Glu Tyr Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp 340 345 350

Arg Pro Gly Val Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln 355 360 365

Phe Ala Ile Thr Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro 370 375 380

Ala His Arg Phe Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu 385 390 395 400

Arg Ser Ile Asn Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp
405 410 415

Ile His Pro Phe Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr 420. 425 430

Gly Ser

<210> 3

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rCYP3A1

<400> 3

tagacagttc atgaagttca totac

25

<210> 4

<211> 25

<212> DNA

<213> Artificial Sequence

<2205

<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rCYP3A2

<400> 4

taagcagttc ataaagttca tctac	25
<210> 5 <211> 25 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rUGT1A6.	
<400> 5 actgtagttc ataaagttca catgg	25
<210> 6 <211> 26 <212> DNA <213> Artificial Sequence	
<pre><220> <223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rbCYP2C1</pre>	
<400> 6 caatcagttc aacagggttc accaat	26
<210> 7 <211> 33 <212> DNA <213> Artificial Sequence <220>	
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rP450R	
<400> 7 cacaggtgag ctgaggccag cagcaggtcg aaa	33
<210> 8 <211> 27 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rCYP2A1	
<400> 8 gtgcaggttc aactggaggt caacatg	27

```
<211> 27
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Putative SXR
      response element from the steroid hydoxylase,
      rCYP2A2
<400> 9
gtgctggttc aactggaggt cagtatg
                                                                    27
<210> 10
<211> 27
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Putative SXR
      response element from the steroid hydoxylase,
      rCYP2C6
<400> 10
agtctagttc agtgggggtt cagtctt
                                                                    27
<210> 11
<211> 27
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Putative SXR
      response element from the steroid hydoxylase,
      hCYP2E1
<400> 11
gagatggttc aaggaagggt cattaac
                                                                    27
<210> 12
<211> 26
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 0 nucleotides
catagtcagg tcaaggtcag atcaac
                                                                    26
<210> 13
<211> 27
```

```
<212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Direct repeat
       with spacer of 1 nucleotides
 <400> 13
 catagtcagg tcataggtca gatcaac
                                                                     27
 <210> 14
 <211> 28
 <212> DNA
 <213> Artificial Sequence
 <223> Description of Artificial Sequence: Direct repeat
       with spacer of 2 nucleotides
 <400> 14
catagicagg tcaataggic agatcaac
                                                                    28
<210> 15
<211> 29
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Direct repeat
       with spacer of 3 nucleotides
<400> 15
catagtcagg tcatataggt cagatcaac
                                                                    29
<210> 16
<211> 30
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 4 nucleotides
<400> 16
catagtcagg tcatataagg tcagatcaac
                                                                    30
<210> 17
<211> 31
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Dir ct repeat
      with spacer of 5 nucleotides
```

```
<400> 17
 catagicagg to tatatag gicagatcaa c
                                                                    31
<210> 18
<211> 33
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 6 nucleotides
catagtcagg tcatatataa ggtcaagatc aac
                                                                    33
<210> 19
<211> 33
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 7 nucleotides
<400> 19
catagicagg tcatatatat aggicagate aac
                                                                    33
<210> 20
<211> 36
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 10 nucleotides
catagicagg tcatatatat ataaggicag atcaac
                                                                    36
<210> 21
<211> 41
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 15 nucleotides
<400> 21
catagtcagg tcatagtagt agtagtagag gtcagatcaa c
                                                                   41
<210> 22
<211> 17
        <212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Example of a
       response element suitable for practice of the
       invention method
<220>
<221> modified_base
<222> (7)..(11)
<223> This region may encompass 5, 4 or 3 nucleotides,
      independently selected from a, c, t or g
<400> 22
agttcannnn ntgaact
                                                                    17
<210> 23
<211> 18
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Example of a
      response element suitable for practice of the
      invention method
<220>
<221> modified base
<222> (7)..(12)
<223> a, c, t or g
<400> 23
tgaactnnnn nnaggtca
                                                                    18
<210> 24
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
<400> 24
tgaactcaaa ggaggtca
                                                                    18
<210> 25
<211> 18
<212> DNA
<213> Artificial Sequence
<220×
<223> Description of Artificial Sequence: Inverted
     repeat response element with spacer of 0
     nucleotides
```

agett	aggtc atgaccta	18
<210><211><211><212><213>	19	
<220> < 223 >	Description of Artificial Sequence: Inverted repeat response element with spacer of 1 nucleotides	
<400> agctt	26 aggtc agtgaccta	19
<210> <211> <212> <213>	20	
<220> <223>	Description of Artificial Sequence: Inverted repeat response element with spacer of 2 nucleotides	
<400> agctta	27 aggte acgtgaccta	20
<210><211><211><212><213>	21	
	Description of Artificial Sequence: Inverted repeat response element with spacer of 3 nucleotides	
<400> agctta	28 aggtc acagtgacct a	21
<210><211><211><212><213>	22	
<220> <223>	Description of Artificial Sequence: Inverted repeat response element with spacer of 4 nucleotides	
<400> agotta	29 ggtc acatgtgace ta	22

```
<210> 30
 <211> 23
 <212> DNA
 <213> Artificial Sequence
 <223> Description of Artificial Sequence: Inverted
       repeat response element with spacer of 5
      nucleotides
<400> 30
agettaggte acactgtgae eta
                                                                     23
<210> 31
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Inverted
      repeat response element with spacer of 6
      nucleotides
<400> 31
agctttgaac tcaaaggagg tca
                                                                     23
<210> 32
<211> 18
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: IR-M
<400> 32
agcttacgtc atgacgta
                                                                    18
<210> 33
<211> 33
<212> DNA
<213> Homo sapiens
tagaatatga actcaaagga ggtcagtgag tgg
                                                                    33
<210> 34
<211> 33
<212> DNA
<213> Homo sapiens
<400> 34
tagaatatga actcaaagga ggtaagcaaa ggg
                                                                    33
```

```
<210> 35
 <211> 32
 <212> DNA
 <213> Homo sapiens
<400> 35
tagaatatta actcaatgga ggcagtgagt gg
                                                                     32
<210> 36
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide for PCR
<400> 36
gagcaatteg ceattactet gaagt
                                                                     25
<210> 37
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide for PCR
<400> 37
gtccttgggg tcttctacct ttctc
                                                                    25
<210> 38
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide for PCR
<400> 38
gacgatttgg atctggacat gttgg
                                                                    25
<210> 39
<211> 15
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
     oligonucleotide for PCR
<400> 39
tgaacttcat gaact
                                                                    15
```

```
<210> 40
 <211> 25
 <212> DNA
 <213> Artificial S quence
 <223> Description of Artificial Sequence: Synthetic
       oligonucleotide
 <400> 40
gttttcatct gagcgtccat cagct
                                                                     25
<210> 41
<211> 6
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Illustrative
      peptide
<400> 41
Arg Gly Lys Thr Cys Ala
<210> 42
<211> 15
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
<400> 42
tgttcttcat gttct
                                                                    15
<210> 43
<211> 15
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
<400> 43
acaacttcat gaact
                                                                    15
<210> 44
<211> 15
<212> DNA
<213> Artificial Sequence
        <220>
```

```
<223> Description of Artificial Sequence: Direct repeat
       with spacer of 3 nucl otides
 <400> 44
 aggtcannna ggtca
                                                                     15
 <210> 45
 <211> 16
 <212> DNA
 <213> Artificial Sequence
 <223> Description of Artificial Sequence: Direct repeat
       with spacer of 4 nucleotides
<400> 45
aggtcannnn aggtca
                                                                     16
<210> 46
<211> 17
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 5 nucleotides
<400> 46
aggtcannnn naggtca
                                                                    17
<210> 47
<211> 15
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 3 nucleotides
<400> 47
agttcannnt gaact
                                                                    15
<210> 48
<211> 16
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Direct repeat
      with spacer of 4 nucleotides
<400> 48
agttcannnn tgaact
                                                                    16
```